Project Leader's Report

August 2006

Rivers of Georgia

USDA Forest Service - Southern Research Station - 320 Green Street, Athens GA 30602 - http://www.srs.fs.usda.gov/disturbance

CFDS

CENTER FOR FOREST DISTURBANCE SCIENCE

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Outreach Activities:

• Three organized groups, totaling 44 people, visited the Brender Demonstration Forest during August. These groups included a biology class from Mercer University studying natural selection and biomass; our cooperator group from US Fish and Wildlife Service, Wild Turkey Federation, Georgia Power Company, and the Chattahoochee and Oconee National Forests; and a team from Georgia Forestry Commission, Southeastern Wood Producers and Brender Forest to plan future training for loggers and foresters.

• A total of 34 people came by the Brender Forest office for information, and 26 people hiked the Hitchiti Interpretive Trail.

• Dave Cleland taught a course on fire and ecosystems for journalists funded by a grant to the Institute for Journalism & Natural Resources. Twenty journalists from the US and Canada attended.

• Mac Callaham served as a judge for the "Best Student Presentation" competition held by the Soil Ecology Section during the ESA meetings in Memphis.

Little Joe Park, Adam and Hoss on the trail in Mongolia.

Technology Transfer:

Plot burned annually on the Osceola National Forest.

New analyses by Joe O'Brien and collaborators indicate that high intensity fires prescribed to kill overstory oaks might not be necessary to restore understory plant communities in longleaf pine systems. Burning off the litter layer had a greater impact on understory responses than reducing the overstory.

Ralph DiCosty attended the Eighth International Conference on Mercury as a Global Pollutant in Madison, Wisconsin, where he presented a poster entitled "Impact of prescribed fire on mercury cycling in Southeastern U.S. forests." The poster, co-authored by Mac Callaham and John Stanturf, described the unit's recent study on the Osceola National Forest. More details on the conference itself appear in the Science Highlight.

Mac Callaham and Joe O'Brien attended the Ecological Society of America annual meeting, held in Memphis, TN. O'Brien presented two papers, "Litter versus shade: partitioning the effects of forest floor accumulation and midstory canopy development on understory density and species richness in sand hill communities"and "A tale of two forests: light environments in slash and longleaf pine forests and their impact on seedling responses."

Mac Callaham and University of Texas colleague, Christine Hawkes, organized one of the symposia for the Ecological Society of America annual meeting entitled "Returning Soils to Restoration Ecology: Rethinking the Trade of Structure for Function." The symposium featured a half-day of talks

Technology Transfer:

delivered by invited speakers who examined the problem of returning the principles of soil ecology into the practice of ecosystem restoration. Callaham delivered an introductory presentation for the symposium entitled "The History and Future of Soils in Restoration Ecology."

Several students affiliated with the unit also gave presentations at the ESA meetings. Former UGA undergraduate Dana Camp presented a poster detailing the results of her Research Experience for Undergraduates project conducted last summer. Graduate students Carla Giai (Ohio State University), Karen Lamoncha (UGA), and Aaron Stottlemyer (Clemson) all presented posters detailing work from their dissertation studies. Graduate student Bruce Snyder (UGA) gave a talk in one of the organized sessions dealing with invasive invertebrates.

Gary Achtemeier presented a seminar on the use of smoke data reports from the South Carolina Forestry Commission field personnel for validating PB-Piedmont. In attendance were about 25 SCFC staffers and field personnel.

Gary Achtemeier and Scott Goodrick have agreed to serve on the Southern Smoke Management Committee, to provide expertise on smoke modeling. This committee was formed by the Southern Fire Environment Working Team to help address smoke issues in the south with emphasis on the development of state smoke management plans, smoke modeling, and emission inventories.

Joe O'Brien is participating in the development of a workshop and subsequent manuscript, tentatively titled "Fire effects process modeling – improving the science and application" with Matt Dickinson of the Northeastern Research Station. The workshop will be held at the Third International Fire Ecology and Management Congress to be held in San Diego, California.

O'Brien is helping to develop the program for the Caribbean Fire Ecology and Management Symposium, with an executive committee comprised of William Gould, Research Ecologist, IITF, Edgardo Gonzalez, State Forester, Commonwealth of Puerto Rico, Erik Berg, Manager, Joint Fire Science Program, and Mark Cochrane, Professor, South Dakota State University. Joe has proposed a workshop on fire ecology of fire dependent ecosystems in the Caribbean, as much of the research focus in the region is on the damaging effects of fire on fire sensitive ecosystems. He will be present his

Technology Transfer:

A conference on fire ecology in the Caribbean is being planned for April 2007 in Puerto Rico. One focus will be on calling attention to the fire dependent forests of the Bahamas, Hispaniola, Cuba and Central America.

research on Bahamian fire ecology at the symposium.

Coming up in FY 2007, the unit will organize three major conferences. In December 2006, Mac Callaham and colleagues at DePaul University in Chicago will hold "Soils and Restoration Ecology—A Conference to Promote Soil Ecology in the Practice of Restoration Ecology." Topics for the meeting include Historical and Developing Conceptual Bases for Restoration Ecology; Soils as an Afterthought in Restoration Ecology – Why?; How to Incorporate Soils into Restoration Experiments; Restoration in the Face of Biological Invasions; Restoration in the Face of Climate Change; Policy Considerations for Successful Ecosystem Restoration; and Successes and Failures in Soil Restoration: Case Studies. (http://www.srs.fs.usda.gov/events/sre)

In February, the unit will host the 14th Biennial Southern Silvicultural Research Conference, to be held in Athens at the downtown Classic Center. The conference program is available on the website (www.srs.fs.usda.gov/bssrc2007); over 150 oral and poster presentations will be made.

In May, John Stanturf will lead an international conference in Seoul, Korea on "Forest Landscape Restoration" hosted by the Korea Forest Research Institute and sponsored by IUFRO and the USDA Forest Service. Themes for this conference include Landscape History (cultural versus natural landscapes; legacies of the past affecting the future); Landscape Ecology (contributions from ecological theory); Governance and Land Tenure (what is the role of government?); Ecosystem Services (how to maximize benefits; are they a measure of restoration success?);

Technology Transfer:

Future Landscapes (how to incorporate uncertainty of climate variability or climate change into landscape restoration); Managed Landscapes (the role of plantations or production forestry in landscape restoration); How to do landscape restoration (case studies); and Innovative approaches to science delivery in landscape restoration. Details will soon be available from a website.

Visitors:

Palle Madsen, Senior Researcher with the Danish Forest and Landscape-KVL, visited John Stanturf to work on a special issue of the Journal of Sustainable Forestry. They also planned their collaboration on a paper on wildlife impacts on regeneration, drafted themes for the IUFRO Forest Landscape Restoration conference, and developed a process for compiling information on boreal and temperate forest silviculture, with an eye toward producing a "state of the knowledge" paper for IUFRO. It was a full day's work.

Palle Madsen and John Stanturf worked long hours trying to complete a manuscript.

Funding:

Dave Wear, Project Leader of the Forest Economics and policy unit, provided $20,000 to support the high-performance computing capability, in anticipation of support for simulations for the Resources Planning Act reporting.

Meetings/Reports:

Most of the unit scientists attended the Threats to Forest Health Science Area meeting in Atlanta to begin developing a charter. The unit has changed its name to the Center for Forest Disturbance Science and modified logos accordingly. (Did you notice the new logo on page 1?)

Gary Achtemeier, Scott Goodrick and Yong Liu attended a SHRMC Director's meeting held at the Geography/Geology Department at the University of Georgia. The purpose of the meeting was to review the status of SHRMC facilities, including the installation of additional clusters in the three computers, and progress on hiring a data systems manager by UGA.

Achtemeier met with staff of the South Carolina Forestry Commission and gave a presentation on data needs for air quality modeling, laying the groundwork for an agreement with South Carolina that provides for the transfer of SC fire activity data to SHRMC in near real time.

Personnel News:

Ken Outcalt received the Chief's Honor Award for Natural Resource Stewardship. Ken and John (who will receive the award for Distinguished Science) will attend the award ceremony in Washington, DC in September, accompanied by wives Patricia Outcalt and Eileen Stanturf.

Dr. Yeong Dae Park and his family, wife Mi Young Ku and daughter Seoyeong, arrived from Seoul, Korea to take up a visiting scientist position in the unit. Park will be working with John Stanturf on developing indicators of sustainability for restoration projects. He was awarded a fellowship from the Korea Science Foundation to undertake postdoctoral research abroad.

Jennifer Kuhr, student worker in the soil quality lab, married Jason Druppel in the Outer Banks, NC. Jason is a phlebotomist with the American Red Cross.

Gayle Gilmore, former student worker in administration, did indeed marry Russell Gilbert in Watkinsville, GA. They have moved to Savannah.

The unit has a position open on USAJobs for a GS 9/11 Program Specialist.

Partnerships:

Steve Norman and Chris Damiani of the Pacific Northwest Research Station and Danny Lee, Eastern Threats Center Director, visited the unit to explore collaboration possibilities on an existing project in northern California regarding fire and fuel treatments, and extending this line of work to areas within the eastern forests.

Some National Fire Plan funding provided by Dale Wade, retired scientist in the unit to Francis Fujioka of the Pacific Southwest Research Station contributed toward an agreement with Scripps Institution of Oceanography, funding long-range forecasting research using dynamic models. The Principal Investigator at Scripps was John Roads, Director of the Experimental Climate Prediction Center. According to Francis, Dale's contribution helped enormously at the time (2002) to accelerate the research, which resulted in several peer-reviewed pubs and a prototype forecasting system accessed via the Internet: http://ecpc.ucsd.edu/projects/fire.html. Publications are: Roads, J. 2004. Experimental weekly to seasonal US forecasts with the Regional Spectral Model. *Bulletin of the American Meteorological Society* 85(12):1887-1902; Roads, J., Fujioka, F., Chen, S., Burgan, R. 2005. Seasonal fire danger forecasts for the USA. *International Journal of Wildland Fire* 14:1-18.

Ross Phillips and Tom Waldrop and Todd Hutchinson, Research Ecologist of the Northeastern Research Station, are cooperating on the analyses of vegetation trends on installations of the National Fire and Fire Surrogate Study. Phillips and Waldrop work with the sites on the Southeastern Piedmont and the Southern Appalachian Mountains. Hutchinson works with the installation in the Ohio Hills Country. The group is working on a paper describing vegetation trends on hardwood-dominated sites for presentation at the National Convention of the Society of American Foresters in Pittsburgh. They are also planning a paper to show the changes in structure and composition resulting from multiple applications of fuel-reduction treatments.

Partnerships:

Tom Waldrop and Knight Cox, Manager of the Clemson Experimental Forest, surveyed potential study sites for a research project on fire and mercury emissions headed by Ralph DiCosty. The project will examine mercury deposition in the forest floor and soil throughout the Southeastern United States. Deposition from stands that have never been burned will be compared to that sampled from stands that have been burned multiple times to better understand how much mercury is volatilized with prescribed burning. DiCosty visited the Clemson sites in August to explain field methods for collecting samples of the forest floor and soil; which the Uplands team will begin collecting in October.

Athena at the Classic Center, site of the BSSRC 2007.

Mercury as a Global Pollutant

Ralph DiCosty

Mercury pollution has been in the national news lately as another side-effect of industrialization. In particular, mercury is emitted from coal-burning power plants, although this is not the only source of mercury in the environment. When the metal is deposited in aquatic systems, it can be easily transformed into methylmercury, a very toxic form. The federal government (EPA) is requiring a 70% reduction nationwide in the amount of mercury emitted from power plants but some states, such as Michigan, have set the tougher standard of 90% reduction by 2015. Mercury is a trace element in coal, forming roughly 1 part per billion of the gas caused by incineration. Attendance at the Eighth International Conference on Mercury as a Global Pollutant held on August 6-11 in Madison, Wisconsin, is one indication of the attention being given to mercury by the scientific community. The conference drew over 1000 participants from 68 nations, and featured an update on the status of four key mercury issues: (1) Source Attribution of Atmospheric Mercury, (2) Health Risks and Toxicological Effects of Methylmercury, (3) Recovery of Mercury Contaminated Fisheries, and (4) Societal Consequences of Mercury Pollution.

The conference featured an innovative process for developing a synthesis of science understanding of an important issue. Each morning, a paper on one of the four key issues was presented by an expert panel before all conference participants. The panels responded to questions and comments from the audience, with discussions continuing on bulletin boards throughout the week. Before the conclusion of the conference, each conferee had the opportunity to vote for or against a series of declarations offered by each panel. The conference declaration was endorsed in full by the 37 scientists comprising the expert panels, and was ratified by a large majority of the conferees. According to a conference news release, "Mercury pollution can threaten the health of people, fish, and wildlife everywhere, from industrial sites to remote corners of the planet, but reducing mercury use and emissions would lessen those threats."

Points in the declaration on mercury include:

- On average, mercury fallout from the atmosphere has tripled since the Industrial Revolution 200 years ago. Although mercury emissions from developed countries have decreased for the last 30 years, these decreases have been offset by a rise in mercury emissions from developing countries.

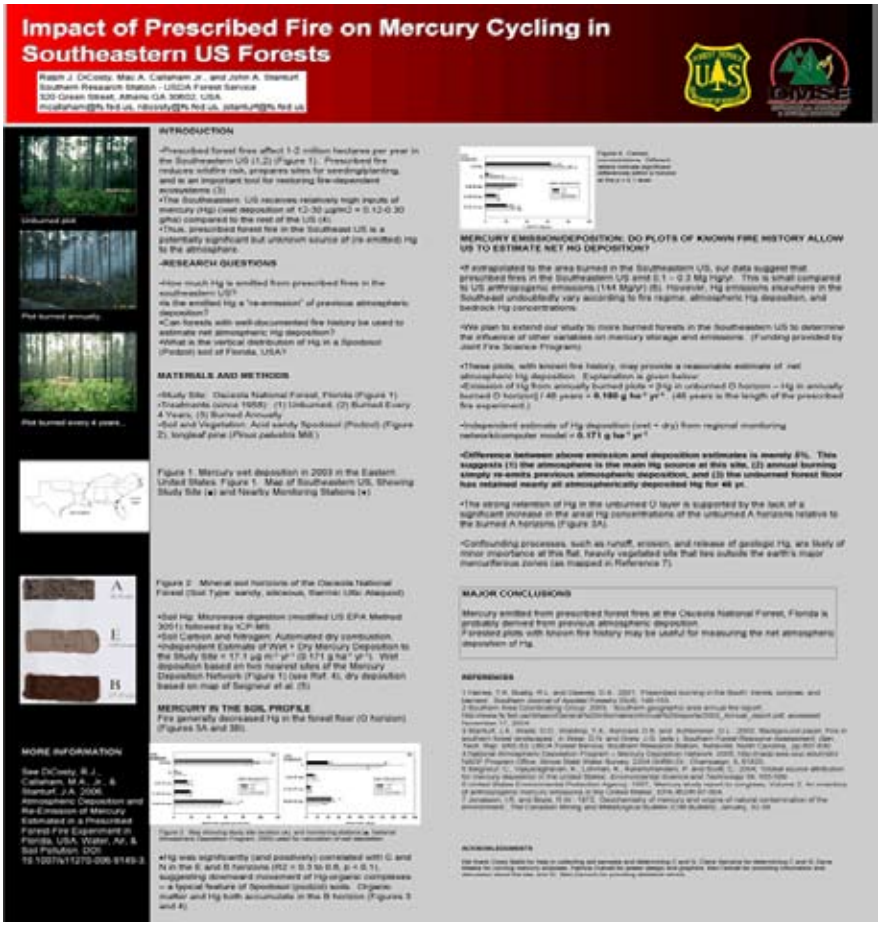
- Methylmercury, a form of mercury in which mercury is chemically bound to carbon, is toxic to the developing fetus. Recent evidence also implicates this form of mercury as a contributing factor to cardiovascular disease, especially in adult men. There is no evidence that selenium in the human diet protects against methylmercury's ill effects.

- Methylmercury in fisheries is expected to decline with reduced mercury inputs, but the timing of the decline varies from years to centuries, according to ecosystem characteristics.

- Human-caused mercury pollution has had and continues to have documented adverse socioeconomic effects.

Conference videos, a speech by Senator Russ Feingold, an article about Clancy The Mercury-Detecting Dog, and other information are available at www.mercury2006.org. The full declaration is available at: http://www.mercury2006.org/portals/31/press/pressconference/mercury2006MG081106.pdf . The papers presented by the expert panels will be submitted for publication in the Swedish journal *Ambio*. The Ninth International Conference on Mercury as a Global Pollutant will be held in Guiyang, China in June 2009.

A similar approach to developing a science synthesis will be attempted at the National Conference on Ecosystem Restoration (see Upcoming Events), which will feature Restoration Coffeehouses (RCH). These RCH sessions will serve as an open forum for attendees to discuss lessons learned, help identify improved pathways based on existing successes and failures and explore vital issues faced by restoration practitioners. These sessions will also incorporate interactive discussion amongst panel members and conference participants, with major conclusions synthesized in real-time by panel leaders. Following NCER, conclusions of these RCH sessions will be converted into a "restoration strategies" white paper.



Ralph DiCosty reported that he had a great deal of interest in his poster at the Eighth International Conference on Mercury as a Global Pollutant held in Madison, WI.

News from Around the Region:

Larry R. Nelson, associate professor and extension specialist with the Clemson University Department of Forestry and Natural Resources, died suddenly on Saturday, Aug. 26. Nelson began his career in 1984, establishing himself as a forest vegetation management expert and making significant contributions to the intensive management of Southern forests. He was active in numerous professional organizations, including past chair of the S.C. Forestry Council. Nelson earned his bachelor's degree in botany from Ohio University, his master's degree in forest pathology from Duke University and his Ph.D. in tree physiology from Auburn University. He was a frequent advisor to the Uplands Team on matters of herbicide application. Nelson is survived by his wife, Cindy, and son, Tyler.

Paul Zinke, a popular professor emeritus of environmental science at UC Berkeley and an authority on forest soils, died in Oakland at age 85. Zinke specialized in analyzing and mapping soils and the various types of forest vegetation they support. His work was global in scope: as part of a National Academy of Sciences team he assessed the ecological effects of Agent Orange in Vietnam and he participated in the first radar mapping of forest types in the Amazon Basin (RADAM). Zinke, who earned a degree in forestry and a doctorate in silviculture at UC Berkeley, became one of his alma mater's most popular lecturers when he began teaching there in 1957. His introductory forestry course was so esteemed by undergraduates that it required one of the university's largest lecture halls. Sometimes 500 students enrolled in the course. Zinke once said he learned to teach by being a student. "I was a student here once, and I knew what I liked and didn't like as a student." (Source: San Francisco Chronicle)

Robert J. Warren, professor of wildlife in the Warnell School of Forestry and Natural Resources at the University of Georgia, was tapped to serve as interim dean after the current dean retires in December.

Fuels loads from hurricane Katrina. (Photo DeSoto National Forest).

Scientists from the Pacific Northwest will help forest managers in the Southeast quickly measure fuel loads across extensive areas of hurricane-damaged forests, the first step in deciding where to remove downed trees in order to prevent devastating wildfires from inflicting even more damage to hurricane ravaged areas in the Southeast. Hurricanes toppled millions of trees across the southeastern United States in 2004 and 2005. Roger Ottmar, a research forester with the USDA Forest Service Pacific Northwest Research Station (PNW) will soon lead a team of fuels specialists in evaluating the amounts of dead trees and branches left on the forest floor. The team will measure logs, stumps, and other forest fuels across a broad spectrum of pine and hardwood forests, and use the data to develop a photographic guide that forest managers can use to rapidly assess fire hazards in their jurisdiction and develop plans for reducing fuel loads. Forest Service scientists will complete their data collection in the spring of 2007, and then translate the data into the guide. These types of guides are already helping federal officials in other regions of the United States, and unprecedented Katrina impacts prompted the recent call to develop a new guide focused on wind-damaged Southern forests. The federal interagency Joint Fire Science Program, based in Boise, Idaho, is funding the project. (Source: PNW Press Release)

John Toliver, Deputy Director of the Rocky Mountain Research Station, will be the Acting Director of the Vegetation Management and Protection staff in Washington through December.

Robert Bridges, Assistant Director in the Northern Research Station, has announced his intention to retire after over 30 years of federal service. His retirement date is in January 2007. Bob and wife Ann will move to Arkansas to be closer to their aging Mothers and other family.

Erik Berg, Joint Fire Sciences Program Manager, has accepted a position with the US Geological Survey in Reston, Virginia. A former Southern Station employee (Bent Creek), Erik takes over the position formerly held by Stan Coloff; Erik's new title will be Assistant Program Coordinator for the Terrestrial, Freshwater, and Marine Ecosystems Program and Lead Coordinator of USGS Wildland Fire Science. He suggests truncating this to Coordinator of USGS Wildland Fire Science. Erik and family will begin their new position in October; his old position at JFSP will be filled by detailers for the time being.

The Forest Restoration Information Service is being developed by the UNEP World Conservation Monitoring Centre (WCMC) with support from the UK Forestry Commission, DFID and the School of H.M. King William III and H.M. Queen Emma of the Netherlands Foundation in collaboration with a range of NGOs. It aims to provide an open-access internet information service to support forest restoration projects world-wide, including site-scale and landscape-scale efforts; facilitate exchange of knowledge and experience among forest restoration projects, and provide a basis for analyzing factors determining success; facilitate the prioritization, design and execution of forest restoration efforts by FRIS users. The FRIS includes definitions of key terms and concepts in forest restoration; case studies of forest restoration; a searchable database of restoration projects and initiatives; maps and datasets; and a bibliography of forest restoration publications. UNEP-WCMC seeks collaboration in the further development of FRIS and invites contributions of case studies or information on forest restoration efforts worldwide. They can be contacted at restoration@unep-wcmc.org; their website is at http://www.unep-wcmc.org/forest/restoration/.

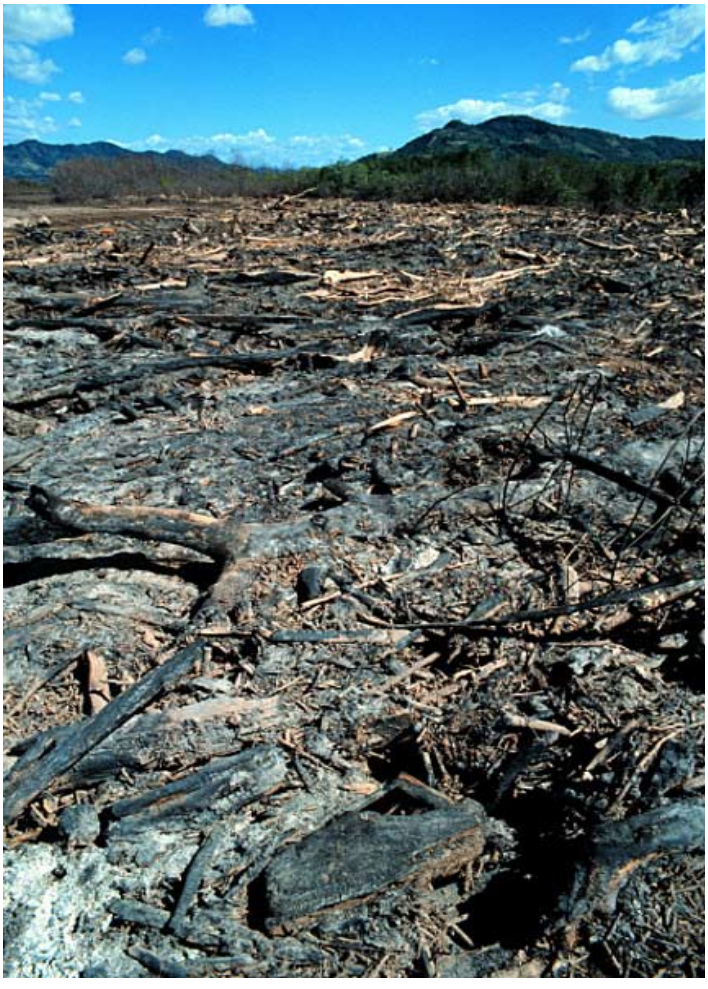
Mangrove forests found along coastline of Florida.

Mangrove forests, with their luxuriant and complicated root systems, form a natural barrier against destructive waves along mostly tropical coastlines. Their protective function prompted several Asian nations hit by the December 2004 tsunami disaster to launch programs to plant mangroves along their coasts. Nevertheless, mangroves continue to face development pressure. In Malaysia, the key threats to mangroves are conversion to oil palm plantations, development for urban road networks, and illegal encroachment and exploitation. Although the prime minister has called for the mangroves to be protected, individual state authorities have the final say on the use of the land where mangroves are located. While a managed mangrove forest in Matang, in central Perak state, supports a fishery worth $100 million a year, mangrove losses hit 84% in some state reserves over the quarter century to 2004, according to a study by the Maritime Institute of Malaysia. Malaysian mangrove forests, home to 41 of the world's 69 species of mangrove plants, have shrunk about 30% in the last 50 years. Mangroves remain at risk of arbitrary action by planners and developers because policymakers have persistently proved

News from Around the Region

unable to put a correct valuation on their numerous benefits. Economists traditionally calculated the value of goods and services generated by coastal ecosystems only in terms of market prices, but ignored indirect values, such as weather protection and flood limitation, that are termed ecosystem services. (Source: Reuters)

Another threat to mangroves and other coastal forests in Asia is conversion to shrimp ponds. Environmental regulation of shrimp farming operations across Asia takes a major step forward when the FAO considers adoption of recently published industry guidelines. Asia generates about 75% of total world production of farmed shrimp, which stood at 1.6 million metric tons in 2003 and was worth nearly $9 billion, the U.N.'s Food and Agriculture Organization (FAO) estimates. As demand for shrimp grows worldwide, concern over the sustainability of fish stocks has risen, forcing consumers and retailers to demand that the food meets environmental guidelines. Policymakers found it hard to reconcile different environmental yardsticks, spurring a group of United Nations agencies and the World Bank to join hands in thrashing out the new, simpler prescription for the industry. The Network of Aquaculture Centers in Asia-Pacific (NACA), which groups 17 nations from India and China to Australia and North Korea, published the set of eight principles for responsible shrimp farming, which an FAO panel is due to weigh and consider adopting at a meeting in September. The rules address issues ranging from farm location, design and construction to questions of shrimp feeding, health and nutrition, as well as food safety issues and concerns over sharing the farm's benefits with surrounding communities. (Source: FAO)



Dead mangroves, devastated through shrimp aquaculture. (Photo Google Images)

Publications

FY 2007 Publications (* denotes new publication this month)
Refereed Journals and Book Chapters

It may seem a little strange that we already have switched to FY 2007 reporting of publications. Our end-of-year-reporting deadline gets earlier every year; it was August 10th this year, so we've moved up the GPRA table.

Refereed Journals and Book Chapters

*Coleman, M.D., **Stanturf, J.A.**, Guest Co-Editors. 2006. Special Issue, Proceedings of the 5th Biennial Short Rotation Woody Crops Operations Working Group Conference. *Biomass and Bioenergy* 30 (8-9): 693-814.

*Coleman, M.D., **Stanturf, J.A.** 2006. Editorial, Biomass feedstock production systems: Environmental and economic benefits. *Biomass and Bioenergy* 30 (8-9): 693-695.

*Lu, A., H. Tian, and **Y.-Q. Liu**. 2005. Recent progress in research on fire disturbance and ecosystem carbon cycle. *Acta Ecologica Sinica* 25: 2734-2743.

Proceedings and Reports

*Richter, D. deB., **M.A. Callaham**, D. Markewitz, and R. Vilgalys. 2006. Understanding soil change at the Calhoun Experimental Forest's Long-Term Soil Experiment. In Irland, L.C., A.E. Camp, J.C. Brissette, and Z.R. Donohew, (Editors), Long-term Silvicultural and Ecological Studies: Results for Science and Management. GISF Research Paper 005, Yale University, New Haven, Connecticut; pp. 169-175.

Other Publications

***Stanturf, J.A**. 2006. Can we bring back Faulkner's Big Woods? *Compass* Issue 6 (July 2006). USDA Forest Service Southern Research Station, Asheville, NC; p. 1-5.

Abstracts and Posters

***Callaham, M.A**., Jr. 2006. The history and future of soils in the practice of restoration ecology. Symposium presentation at Ecological Society of America annual meetings, Memphis, TN, August, 2006. [published abstract]

*Camp, D.L., S.R. Bennett, **M.A. Callaham, Jr., J.J. O'Brien** and P.F. Hendrix. 2006. Carbon and nitrogen dynamics in soils with native and exotic earthworms determined with stable isotopes. Poster presentation at Ecological Society of America annual meetings, Memphis, TN, August, 2006. [published abstract]

*Giai, C., **M.A. Callaham**, and R.E.J. Boerner. 2006. Viewing forest restoration from belowground: linkages among restoration treatments, microbial communities, earthworms, and soil organic matter. Poster presentation at Ecological Society of America annual meetings, Memphis, TN, August, 2006. [published abstract]

*Lamoncha, K.L., **M.A. Callaham, Jr.**, D.C. Coleman, and D.A. Crossley, Jr. 2006. Soil microarthropod community composition in a long-term

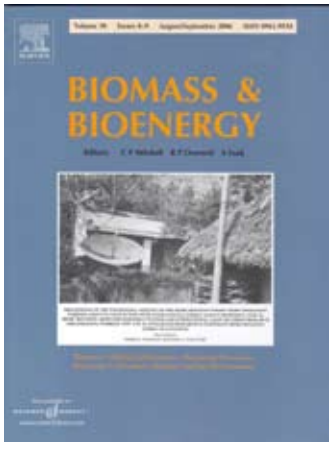
prescribed fire experiment in longleaf pine flatwoods in northeast Florida. Poster presentation at Ecological Society of America annual meetings, Memphis, TN, August, 2006. [published abstract]

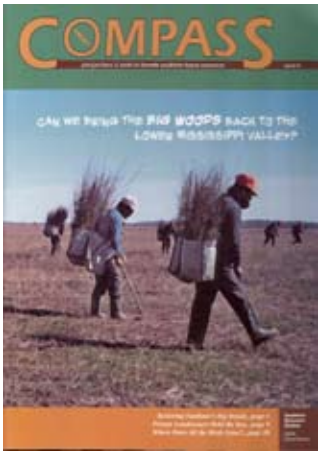
***O'Brien, J.J.**, Hiers, J.K., Will, R., Mitchell, R. 2006. Litter versus shade: partitioning the effects of forest floor accumulation and midstory canopy development on understory density and species richness in Pinus palustris sand hill communities. Oral presentation at Ecological Society of America annual meetings, Memphis, TN, August, 2006. [published abstract]

*Pecot, S. Mitchell, R, **O'Brien, J.J.**, Kirkman, K. 2006. A tale of two forests: light environments in slash and longleaf pine forests and their impact on seedling responses. Oral presentation at Ecological Society of America annual meetings, Memphis, TN, August, 2006. [published abstract]

*Snyder, B.A., P.F. Hendrix, and **M.A. Callaham, Jr.** 2006. Effects of an upstart in iconic territory: invasion of *Amynthas agrestis* (Oligochaeta: Megascolecidae) in the Great Smoky Mountains National Park. Oral presentation at Ecological Society of America annual meetings, Memphis, TN, August, 2006. [published abstract]

*Stottlemyer, A.D., R.T. Layton, G.G. Wang, C.E. Wells, **T.A. Waldrop, and M.A. Callaham, Jr.** 2006. Growing nonmycorrhizal loblolly pine (*Pinus taeda L.*) seedlings in a standard greenhouse setting. Poster presentation at Ecological Society of America annual meetings, Memphis, TN, August, 2006. [published abstract]





Upcoming Events:

2006

Sep 11-14 Baltic-Scandinavian Disturbance Network annual meeting, Tromsø, Norway with field excursions to Lapland in Finland (Alta, Lakselv and Kilpisjärvi); http://www.eau.ee/~ecosyst/index.php?page=coming

Sep 24-26 SESAF Meeting, Auburn, AL

Sep 25-28 2006 biennial meeting Short Rotation Woody Crops Operations Working Group, Red Lion Inn, Pasco, Washington; tentatively, joint meeting with Poplar Council of Canada, US Poplar Council, IUFRO Temperate Short Rotation Forestry Working Party 1.03.02, and SAF Agroforestry Working Group;

Sep 25-27 IUFRO Oak Silviculture Working Party (1.06) meeting, Stevens Point, WI; optional pre-conference field trip to SW WI on Sept 21-23, and optional post-conference tour to northern WI on Sept 28-30.

Sep 26-29 Patterns and Processes in Forest Landscapes; Consequences of Human Management, University of Bari, Italy; IUFRO 8.01.03 Landscape Ecology; http://www.greenlab.uniba.it/events/iufro2006/

Oct 4-7 IUFRO and EFI International Meeting, "Ecosystem Goods and Services from Planted Forests," Bilbao, Spain; http://www.iefc.net

Oct 10-13 Conference on "Sustainable Forest Management with Fast Growing Plantations", Charleston, SC; contact Dave Wear dwear@fs.fed.us

*Oct 17-24 2006 National Tree Farm Convention, Mobile, Alabama

Oct 25-29 Society American Foresters Annual Meeting, Pittsburgh, PA

Oct 23-27 Knowledge management in forestry conference, sponsored by KnowForAlp, hosted by Forest Research Institute Baden Württemberg, Freiburg, Germany

Nov 7-9 2nd National Experimental Forest and Range Workshop, Bent Creek Experimental Forest, Asheville, North Carolina

Nov 7-9 Shortleaf Pine – Restoration and Ecology in the Ozarks Symposium, Springfield, MO; http://www.mdc.mo.gov/science/sl_pine/

Nov 8-9 National Agenda 2020 Forest Productivity and Technology Workshop, Washington, DC

Nov 12-16 Soil Science Society of American Annual Meeting, Indianapolis, IN; http://www.indy.org

Nov 13-17 3rd International Fire Ecology and Management Congress, San Diego, CA; http://emmps.wsu.edu/firecongress/

Nov 14-16 SRS Management Team Meeting, joint with Region 8; Atlanta.

Dec 11-16 American Geophysical Union Fall meeting, San Francisco; session on "Impact of Climate Variability and Extreme Weather on Ecosystem Structure and Function Across Spatiotemporal Scales" http://submissions4.agu.org/submission/entrance.asp

*Dec 11-15 International Workshop on Climate and Land Degradation, Arusha, Tanzania; contact msivakumar@wmo.int

Upcoming Events:

*Dec 18-20 Soils and Restoration Ecology conference, DePaul University, Chicago, IL; http://www.srs.fs.usda.gov/events/sre. Callaham to attend

2007

Jan 30-Feb 1 Southern Research Station All Scientists Meeting; location TBD

Jan 31-Feb 3 International Meeting of Fire Effects on Soil Properties, Barcelona. http://www.ub.edu/gram/

Feb 26-Mar 1 14th Biennial Southern Silvicultural Research Conference, Athens, GA;

Mar 6-8 2007 Wildland Urban Interface Conference, Reno, Nevada; Call for Presentations Deadline August 10; www.iafc.org/wui

*Apr 17-19 Caribbean Fire Ecology and Management Symposium, San Juan, Puerto Rico

Apr 18-19 IUFRO conference Leading Forestry Research in an Era of Globalization (tentative title); Washington, DC

*Apr 22-27 2nd National Conference on Ecosystem Restoration (NCER), Kansas City, MO; http://www.conference.ifas.ufl.edu/NCER2007

May 13-17 4th International Wildland Fire Conference, Sevilla, Spain; http://www.fire.uni-freiburg.de/course/meeting/2007/meet2007_01.htm

May 14-18 IUFRO Forest Landscape Restoration Conference, Seoul, South Korea; venue is COEX in Seoul; http://www.coex.co.kr/

May? North American Forest Biology Workshop, hosted by the Hard wood Tree Improvement and Regeneration Center, Purdue University; http://www.agriculture.purdue.edu/fnr/HTIRC/

Jun 6-8 EastFire II Conference, George Mason University, Fairfax, VA; http://eastfire.gmu.edu/temp/eastfirewatch/conference.htm

Summer 6th North American Forest Ecology Workshop, to be held in British Columbia

Jun 10-14 10th International Congress on Biotechnology in the Pulp and Paper Industry, Madison, WI; http://www.bact.wisc.edu/ICBPPI_2007/

Aug 5-10 Joint meeting of the Society for Ecological Restoration and the Ecological Society of America, San Jose, CA; http://esa.org/sanjose/symposiumProposals.php

*Aug 19-23 International Symposium on Forest Soils and Ecosystem Health: Linking Local Management to Global Challenges, Sunshine Coast, Queensland, Australia; http://www.griffith.edu.au/conference/isfs2007

Sep 30-Oct 3 Faculty of Forestry, University of Toronto Centennial Conference "Global Vision of Forestry in the 21st Century," Toronto, Canada; http://www.forestry.utoronto.ca/centennial/int_congress.htm

Oct 24-28 Society American Foresters Annual Meeting, Portland, OR.

Nov 4-8 Soil Science Society of American AAnnual Meeting, New Orleans, LA; http://www.neworleanscvb.com

Upcoming Events:

2008

*Sep 18-22	5th International Conference on Land Degradation, Valenzano, Bari, Italy; http://www.iamb.it/5ICLD
Oct 5-9	Soil Science Society of America Annual Meeting, joint with Geological Society of America, Houston, TX
Nov 5-9	Society American Foresters Annual Meeting, Reno, NV.

2009

Nov 1-5	Soil Science Society of America Annual Meeting, Pittsburgh, PA World Forestry Congress, Buenos Aires, Argentina

2010

IUFRO World Congress, Seoul, Republic of Korea

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GPRA -Accomplishment

Category	FY 2004 Total	FY 2005 Total	FY 2006 Total	FY 2006 To Date
Number of Refereed Journal Publications	20	21	32	3
Number of Non-Refereed Publications (including abstracts)	89	60	62	10
Number of Publications (refereed + non-refereed)	109	81	94	13
Number of Tours	41	40	31	1
Number of Short Courses/Training	20	13	23	1
Number of Invited Presentations to Scientific Organizations	12	7	19	1
Number of Invited Presentations to Lay Organizations	30	32	25	2
Volunteer Presentations to Scientific Organizations (non-GPRA)	42	50	19	9
Number of Technology Transfer Activities (other than above)	105	132	91	14
Outside Funding	$2,610,574	$3,688,734	$2,112,253	0.00

SRS-4104 Project Leader's Report

John Stanturf - Editor Lynne Breland - Technical Writer
Patricia A. Outcalt - Production, Design and Layout

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